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(54) **N,N'-DI-1 NAPHTHYLGUANIDINE HCL (NAGH) AND N,N'-DI-P-NITROPHENYLGUANIDINE HCL (NAD) TREATMENT FOR STROKE AT DELAYED TIMEPOINTS**

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See application file for complete search history.

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(57) **ABSTRACT**

A method of treating stroke by administration of a novel sigma agonist is presented. Twenty-four hours after MCAO, systemic administration of several novel sigma agonists including: Bromo-DTG; Chloro-DTG; N,N'-di-1-Naphthyl-guanidine hydrochloride (NAGH); N,N'-di-p-Nitrophenyl-guanidine HCL (NAD) or vehicle were injected subcutaneously daily for 3 days. Rats treated with Bromo-DTG and Chloro-DTG had no significant improvements in any of the motor or cognitive tests while NAGH treated rats showed improved vertical movement and had significantly less motor asymmetry and bias than vehicle treated rats. Sigma receptor agonist NAGH also was found to exert its long-term neuroprotective effects by preserving both gray matter and white matter tracts. Both NAD and NAGH, when administered 24 hours after experimental stroke, reduced neural damage and enhanced behavioral recovery thirty days later which suggests that NAGH and NAD potentially extend the therapeutic window of stroke several fold over the current treatments.

20 Claims, 22 Drawing Sheets